



REPUBLIC OF UGANDA

**MINISTRY OF ENERGY AND MINERAL DEVELOPMENT**

**CONSULTANCY SERVICES FOR MONITORING, VERIFICATION  
AND EVALUATION OF THE COMPACT FLUORESCENT LAMP  
(CFL) PROGRAM**

**BASELINE AND MONITORING REPORTS**

*Submitted to:*

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## **EXECUTIVE SUMMARY**

The Ministry of Energy and Mineral Development (MEMD) has contracted Development Consultants International (DCI) in association with Center for Research in Energy and Energy Conservation (CREEC), to undertake this consultancy to Monitor, Verify and Evaluate the CFLs program. Three main objectives of the exercise were put in place in the TOR, namely:

- (i) to establish if the CFLs are being distributed to the consumers as propose in the distribution plan
- (ii) to monitor and evaluate the implementation f the program to identify any obstacles during implementation
- (iii) to assess he impact of the program on reducing load shedding

### **Assumptions about the CFLs**

Two main assumptions have been made about the CFLs, namely:

- i) Compact fluorescent lamps use 70 - 75% less energy than their incandescent equivalents. When replacing a 100-watt incandescent lamp a 23-watt CFL is used.
- ii) Compact fluorescents last approximately 10,000 hours, which is 10 to 13 times the life of an incandescent lamp (expected life approximately 750 to 1000 hours).

### **Justification of the study**

Given the minimal amount of electricity available on the national grid, there is an urgent need to conserve the existing electrical energy available. Ordinary people use electricity mainly for lighting consequently. lighting is therefore a good starting point to manage electricity usage under the control strategy called Demand Side Management, (DSM).

### **Methodology**

In order to perform the monitoring, verification and evaluation of the CFL distribution project, the Consultant used the following methodology in establishing the progress of the distribution program and in determining the impact of the CFL distribution project.

## **Study Design**

Baseline consists of the samples of the households in the areas where the distribution of CFL has been carried out, the samples of the distributors of CFLs and the average 30 minute load profiles. Questionnaires for the households and the distributors have been developed (**see Annex 5**). In addition, Focus Group Discussions and Individual depth interviews were used to generate qualitative data.

## **Baseline Data**

The baseline data obtained from UMEME and UETCL was based on the areas where the CFLs are distributed as given in the distribution plan. The data available from UMEME includes the daily load curves (or load pattern) and the periodical energy consumption.

The Consultant used the evening peak load data because lights are used during this time of the day. To find the impact of CFLs basing on energy, it was found that less energy is used when CFL's are used than when the ordinary incandescent lamps are used.

## **Average Peak Load of selected UMEME Districts**

Peak demand and line data have been selected as good indicators for assessing the impact of CFL's. Therefore for the purpose of presenting baseline data, daily peak demands were considered from which average monthly demands were computed. Line data was obtained for the following UMEME districts which are in the CFL Project: Entebbe, Bombo, Banda, Kampala Metro, Najjanankumbi and Nateete. The data obtained were the average monthly peak load values (in MVA) for the period from January up to June, 2007 for the different lines in the districts. It has been observed that

The study has established that the drop in the peak average is clearly associated with the level of distribution of CFLs and there is positive relationship between the Average Peak Demand and the Distribution of CFLs. In this case, the more the distribution of CFLs is, the lower is the average peak demand.

## **Key Findings from the Monitoring Activities**

- i) Data from the monitoring activities was collected from Kampala districts in which 1021 domestic customers were surveyed. Most of the domestic customers (93%) in Kampala had known about the Government promotion of energy saving lamps for domestic customers through provision of 3 energy saving lamps (CFL). The majority of them heard about the program through the radio (87.3%).
- ii) The majority (83%) of the domestic customers sampled said they had got the new energy saving bulbs from the government through the Yellow Pages
- iii) Low coverage in some districts is explained by inadequate sensitisation, while in others, flyers and posters were printed in English. Yet in others Yellow Pages put on yellow shirts and dresses which were mistaken for NRM party propagandist
- iv) While UMEME customers were supposed to get three CFLs each, 81% satisfied this condition. However, 9% got more than three and some reported having received up to six bulbs
- v) Though the customers were required to hand in the ordinary bulbs before getting the energy savers, there are some instances where customers did not do this. For example it has been shown in Table 2.5 that of those who received more than 3 bulbs, 90% gave in the three incandescent bulbs to be destroyed, meaning that 10% gave in less than 3 bulbs.
- vi) 58% said the ordinary bulbs were destroyed, still a high proportion reported that the distributors decided to go with them (31%)
- vii) 49% of those who missed the CFLs claimed not to have ever seen the distributors. 23% agreed that the distributors came but the customers were not at home. 15% said the bulbs were out of stock by the time the Yellow Pages reached their premises. 9% said that already bought energy savers and 1.4% did not want the bulbs.

## **Recommendations**

- i) The study findings have shown gaps in the sensitization activities. These need to be strengthened

- ii) Yellow Pages must be consistent with the laid down procedures concerning the number of ordinary incandescent bulbs they must withdraw from the consumers and how they should be destroyed
- iii) The allegation that some CFLs are being sold in the private market should be investigated as a criminal activity. The Police is the best institution to do so.

## **SECTION ONE:**

### **BASELINE REPORT**

#### **1.0 BACKGROUND AND INTRODUCTION**

##### **1.1 Background**

Government instituted major changes in the power sector with the view of making it more efficient and effective. These changes included the formation of a new Policy (1999) and creation of new institutions namely, UEGCL, UMEME, UETCL and ERA. It was anticipated that the new reforms would make the power sector financially viable and able to perform without subsidies from the government budget. Also expected was that the country would necessarily receive increased efficiency in the sector. Subsequent studies have shown that Uganda is currently experiencing a short fall in electricity supply which has led to a massive load shedding of 24 hours. As a mitigating measure, Government has instituted activities to reduce the shortfall in power supply with both supply and demand side measures. On the demand side, the strategy is to reduce power supply deficit and to improve efficiency. The consumers are targeted at household levels to be sensitized through awareness campaigns and demonstration of using CFLs for them to appreciate the benefits accrued from CFLs. In doing so, Government has procured 800,000 Compact Fluorescent Lamps (CFLs) for distribution to UMEME domestic consumers in various parts of the country. The consumers are given three CFLs free of charge, and in return, three ordinary bulbs are withdrawn and replaced with the CFLs.

The Ministry of Energy and Mineral Development (MEMD) has contracted Development Consultants International (DCI) in association with Center for Research in Energy and Energy Conservation (CREEC), to undertake this consultancy to Monitor, Verify and Evaluate the CFLs program. Three main objectives of the exercise were put in place in the TOR, namely:



- (iv) to establish if the CFLs are being distributed to the consumers as propose in the distribution plan
- (v) to monitor and evaluate the implementation f the program to identify any obstacles during implementation
- (vi) to assess he impact of the program on reducing load shedding

## **1.2 Assumptions about the CFLs**

The following assumptions were made concerning the CFLs:

- i) Compact fluorescent lamps use 70 - 75% less energy than their incandescent equivalents. When replacing a 100-watt incandescent lamp a 23-watt CFL is used.
- ii) Compact fluorescents last approximately 10,000 hours, which is 10 to 13 times the life of an incandescent lamp (expected life approximately 750 to 1000 hours).
- iii) Compact fluorescents are most cost-effective when used at least 2-3 hours per day.
- iv) Although compact fluorescent lamps may appear different than the common incandescent, they fit most standard fixtures found in homes today. The screw-in base is the same on both lamps (E27).
- v) The typical incandescent lamp wastes more than 90% of the energy it uses, producing heat rather than light.
- vi) The latest compact fluorescent lamps have improved colour rendition. The light is a warm tone that is almost identical to that of an incandescent lamp. Most people can't tell the difference.

## **1.3 Current Electric Energy Situation in Uganda**

Uganda as we all know, is a third world country with very little infrastructure and therefore much less electricity generation let alone electricity consumption. As a country it consumes approximately five million tones of oil equivalent per annum. Ninety percent of this being biomass energy especially in the form of wood; this is due to the large rural population in this country. Six percent of this energy is

electrical, providing a growing population of well over twenty three million people as per 2002 [1]. Below is Table 1 showing the electrification coverage of Uganda [2]:

**Table 1.1: Electrification Coverage in Uganda**

	TOTAL	URBAN	RURAL
Population	22M	3.6M	18.4M
No. Households	4.6M	0.8M	3.8M
Percentage of HH with electricity	0.25	0.17	0.08
Electrification coverage	5.9%	2.1%	3.8%

Electricity in Uganda is generated at 11kV and transmitted via a 132kV network. 66kV and 33kV lines are also used for transmission. Distribution is done via 11kV lines in rural areas and 33kV lines in urban areas. Household distribution is done at transformed 240V single phase lines and 415 three phase lines; however single phase distribution is most adequate and common for households and small scale industry [2].

With rural electrification and increased access to electricity as development goals for the government, the move to liberalize the sector was welcome in trying to meet these goals. The steady growth of the economy, industrialization, exportation of electricity to neighbouring countries like Kenya, Rwanda and Tanzania, and the drive for rural electrification have increased the demand for electricity .It is currently estimated that this demand rises by about 4-5MW per month[1]. This increased demand has become a crippling factor given the fact that Uganda’s power generation has dropped by more than half from 300MW installed capacity to 120MW as of october2006 [3] at the two principal dams of Nalubaale and Kiira on Owens falls at Jinja, yet the current demand measures up to about 340MW[6]. It is worth noting that hydro electricity accounts for 95% of Uganda’s electricity generation and consumption.

#### **1.4 Justification**

Given the minimal amount of electricity available on the national grid, coupled with growing demand as the need for a domestic energy and industrialization increase plus the current exportation of power, there is an urgent need to conserve the existing electrical energy available. Currently in Uganda, electricity’s immediate benefit to the

average citizen is lighting. Lighting is therefore a good starting point to manage electricity usage under the control strategy called Demand Side Management, (DSM).

Currently, most lighting systems in the country use incandescent lamps with the common types having ratings of about 60W to 100W. Incandescent lamps are easier and cheaper to manufacture. These lamps though cheap, are very detrimental to the economy, the environment and to the national grid. These lamps convert about 90% of the energy they consume to heat. Only 10% is used for lighting [4]. Incandescent lamps as stated above have a very high power rating, they consume a lot of energy.

The reasons as to why CFL's should be used are many; they have a longer working life estimated to be ten times as long as the incandescent lamps. Below are quotations from the IEC60969 standard [4]:

CFL: 6000-15000hrs

Incandescent lamps: 750-1000hrs [6].

CFL's range in all shapes and sizes and are thereby flexible for use anywhere in a household. They also use less energy; as much as 78% less, emit more light than incandescent lamps for the same power rating and therefore save on electricity costs, and also with their energy saving property, less energy is drained from the grid, leaving more available for use elsewhere such as in industry. CFL's are also more efficient than incandescent lamps i.e. 7%-8% for CFL's and 2% for incandescent lamps [4].

## **2.0 METHODOLOGY**

In order to perform the monitoring, verification and evaluation of the CFL distribution project, the Consultant used the following methodology in establishing the progress of the distribution program and in determining the impact of the CFL distribution project.

### **2.1 Study Design**

The baseline consists of the samples of the households in the areas where the distribution of CFL has been carried out, the samples of the distributors of CFLs and the average 30 minute load profiles. Questionnaires for the households and the distributors have been developed (see **Annex 5**), and the data acquisitioned from UMEME and UETCL on the load profile to be used in order to verify and evaluate the project. In addition, qualitative methods were used among Yellow Page personnel in order to generate indepth understanding of the issues involved in the distribution process.

#### **2.1.1 Technical Data**

The baseline data obtained from UMEME and UETCL was based on the areas where the CFLs are distributed as given in the distribution plan. The data available from UMEME includes the daily load curves (or load pattern) and the periodical energy consumption. It should be noted that UMEME manages both distribution transformers at substations and lines from these transformers to various areas. In order to monitor the operation and energy consumption from the grid, UMEME has installed meters at various major transformers and lines which are remotely monitored. The data obtained from these meters can be used to analyse the load pattern and energy consumption. Other methods to collect data may include:

- i) Use of voltage and frequency distribution. This was not used due to the fact that UMEME has not observed any changes since the CFLs were introduced and UMEME has no control over it
- ii) Daily peak average. In principal, this data can be down loaded for use as an indicator. However, its disadvantage is that it generates too much data, which

costs too much time and money to analyse and at the end of it, the results are not significantly different from those of the monthly averages

### **2.1.2 Consideration of Energy Consumption versus Peak Load**

In this study the Consultant used the evening peak load data because lights are used during this time of the day. To find the impact of CFLs basing on energy, it was found that less energy is used when CFL's are used than when the ordinary incandescent lamps are used.

This however is not necessarily achievable because these bulbs are only switched on in the evenings for a short period of time as compared to other devices operating for longer hours during day time such that a scenario can occur where the load during day time after distribution in a particular area is greater than that before distribution leading to more energy consumption. The use of energy may not be a good indicator when assessing the impacting of using CFL's on the grid. However, peak load values can be used with minimum error since they occur at times when CFL's are in operation. The justification of this is demonstrated later in the load curve of the selected sample line (Namugongo line), Figure 2.

### **2.1.3 Transformer Data versus Line Data**

Data from the Kireka transformer and Namugongo line have been used to illustrate why line data should be used in the evaluation instead of the former. The data obtained from UMEME about the daily load pattern is given as average 30 minute-values therefore 48 samples are recorded in 24 hours as indicated on the time axis of the graphs. The use of graphs is to visually capture the daily load pattern for both transformers and lines. These were used to develop the load patterns in Figure 1 below.

**Figure 1: Two-day load curves for the Kireka Transformer**

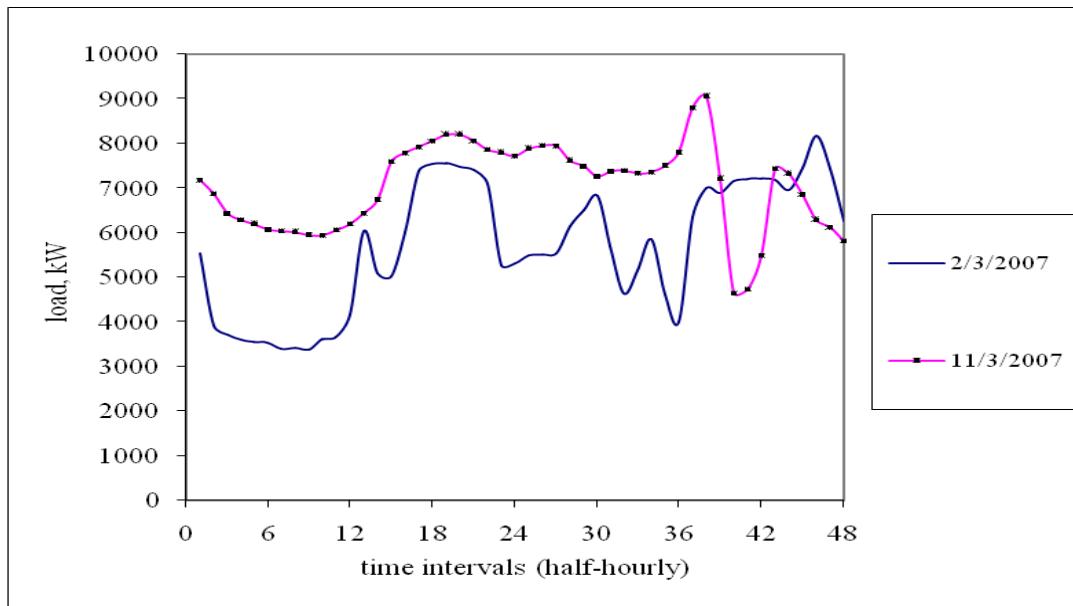
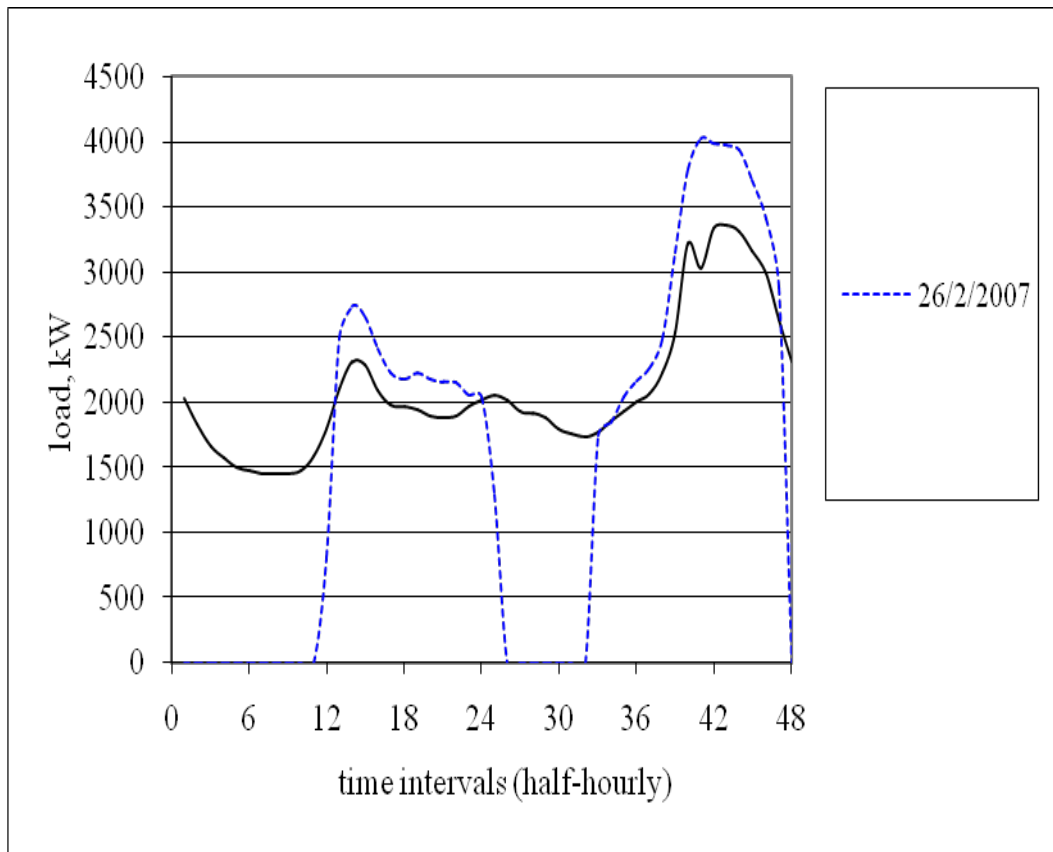


Figure 1 shows the load curves for Kireka transformer taken on two days. The varying pattern of the curves on the different days is due to several factors. The sub-station transformers feed different lines that are load shed at different times of the day. This explains the sharp and inconsistent drops in the curves. Considering these inconsistencies in the Kireka transformer load curves, the data cannot be reliably used in the investigation of the impact of CFLs on electric demand from the grid.

On the other hand, the use of line data from the Namugongo line in Figure 2 below shows some consistency with morning and evening peaks. The evening peaks can be used as indicators to evaluate the impact.

**Figure 2:** Load Curves for Namugongo line.



A comparison of Figure 1 with Figure 2 shows that it is more accurate to work with figure 2. The solid line is the predicted load curve after CFL distribution and is not obtained from UMEME Data. Line Data will thus be used, with the appropriate peak values extracted into tables during data presentation and analysis.

#### **2.1.4 Problems encountered**

There were problems in downloading this data due to: slow network and poor communication links some data is lost in the process.

#### **2.1.5 Information from the Media**

The Consultant is using feedback from the public through media prints such as newspapers, radios and televisions stations, to get public opinion about the distribution of CFLs by Yellow Pages.

### 3.0 BASELINE DATA PRESENTATION AND ANALYSIS

#### 3.1 Average Peak Load of selected UMEME Districts

Basing on the arguments discussed in the methodology i.e. Sections 2.1.2 and 2.1.3, peak demand and line data have been selected as good indicators for assessing the impact of CFL's. Therefore for the purpose of presenting baseline data, daily peak demands were considered from which average monthly demands were computed.

Line data was obtained for the following UMEME districts which are in the CFL Project: Entebbe, Bombo, Banda, Kampala Metro, Najjanankumbi and Nateete. The data obtained were the average monthly peak load values (in MVA) for the period from January up to June, 2007 for the different lines in the districts. The month of February was taken to be the Baseline month since it could give a comprehensive coverage for all the districts. The data for some lines in other months were not available. The reasons for missing data include;

- (1) Faulty meters on some of these lines and,
- (2) On some lines meters are not yet installed there.
- (3) Poor communication linkage between the line and the metering centre at Lugogo.
- (4) Industrial/Commercial areas with almost no domestic consumers.

Table 1.2 below shows the average peak load values for the Baseline month of February, 2007 for entire districts as obtained from the Table 1.3, Annex. It may be noted from Table 1.2 that the average peak demand for Entebbe is 15.5MVA, Banda is 57.2 MVA, Kampala Metro is 66.8 MVA, Najjanankumbi is 34.2 MVA, Nateete is 32.7 MVA and Bombo is 6.7 MVA.

**Table 1.2: Average Monthly Peak Load**

UMEME District	Average Peak Load (MVA) for the Baseline month of February '07	Comment
Entebbe	15.507	Data for all lines were obtained
Banda	57.214	Data for the following lines were missing: CMB, Kampala Ind, Jinja Rd (commercial areas)
Kampala Metro	66.847	
Najjanankumbi	34.198	Entebbe 1 missing
Nateete	32.728	Katwe 2, Kisenyi missing
Bombo	6.726	
<b>Total</b>	<b>213.22</b>	



### 3.2 Relationship between Monthly Peak Averages and CFL Distribution.

Summary of the distribution of CFLs by Yellow Pages is given in Table 1.4 below. It may be observed from Table 1.4 that a total of 426,458 CFLs have been distributed by June 30 2007. However, management of Yellow Pages have indicated that the distribution of CFLs has increased to 480,000 by end of July 2007.

**Table 1.4: Summary of CFLs Distribution Status by 29<sup>th</sup> June, 2007**

<b>District</b>	<b>Distribution Dates (2007)</b>	<b>CFL Installed</b>
Banda	26 February – 17 March	75,195
Wandegeya	19 March – 29 April	71,249
Najjanankumbi	30 April - 12 May	69,195
Kampala Metro	14 – 19 May	20,446
Natete	21 May – 09 June	53,549
Nankulabye	21 May – 09 June	50,448
Mpigi	6 -9 June	3,822
Kitintale	11 – 16 June	25,367
Kabalagala	18 – 23 June	30,959
Entebbe	25 – 30 June	26,228
<b>TOTAL</b>		<b>426,458</b>

When data in Table 1.3 (Annex) is examined against the distribution data in Table 1.4 above, it would be appreciated that the drop in the peak average is clearly associated with the level of distribution of CFLs and there is a positive relationship between the Average Peak Demand and the Distribution of CFLs. In this case, the more the distribution of CFLs is, the lower is the average peak demand.

The change in peak demand on these lines with reference to the selected baseline month (February) can be categorised as follows:

1. Reduction in peak demand
2. No change in peak demand

The available technical data from UMEME is up to the end of June. Therefore for the purpose of monitoring, data for only those lines in the areas which received CFLs up to the end of May have been discussed. The lines are in the following UMEME districts: Banda, Najjanankumbi, Wandegeya and Kampala Metro. Some of these

lines show reduction in peak demand and other do not. In order to explain these changes in demand, the following factors have been taken into account:

- Some of the lines are dominated by domestic consumers for example Namugongo, Kiwatule, Bukoto, Naguru (in Banda District) .Therefore the impact of CFLs can be realised by a reduction in peak demand.
- Some lines are dominated by commercial/industrial or both industrial and domestic consumers for example Brittainia, Kyambogo, PortBell and Breweries lines in Banda district. Such areas may not show any reduction in peak demand

Consequently, Table1.5 is extracted as a summary from Table 1.3 (Annex) to show examples of only lines that are associated with reduction in the monitoring period.

**Table 1.5: Examples of lines associated with reduction in average monthly peak demand during the monitoring period February to June 2007**

<b>UMEME District</b>	<b>Feeder name</b>	<b>Jan.07</b>	<b>Feb.07</b>	<b>Mar. 07</b>	<b>April.07</b>	<b>May.07</b>	<b>June .07</b>
<b>BANDA</b>	SEETA	4.922	5.016	4.844	4.509	4.596	4.698
	NAMUGONGO	4.594	4.697	4.438	4.169	4.117	4.308
	KYAMBOGO	1.565	1.462	1.496	1.475	1.496	1.337
<b>KAMPALA METRO</b>	KIWATULE		2.347	2.533	2.352	1.752	1.563
	KYAMBOGO		2.215	2.325	2.429	1.962	1.814
	KISAASI				4.358	3.378	3.054
	BUKOTO	1.030	1.101	1.028	0.963	0.819	0.797
	KAWEMPE I	7.217	6.285	6.229	5.994	5.908	5.294
	KOLOLO	3.258	3.306	3.190	3.024	3.102	2.673
	KAWEMPE II	2.170	2.205	2.072	1.891	1.619	1.585
<b>NAJJA AREA</b>	NAMULONGE	2.273	2.408	2.370	2.260	1.721	1.555
	Lukuki + Bbunga		5.080	5.011	5.411	5.675	4.376
	KIGO	3.652	3.716	3.543	3.411	3.288	3.249
	KANSANGA		3.022	2.712	2.081	2.685	1.614
	MUYENGA		2.027	2.039	1.667	1.497	1.485

As already explained above, the consultant can draw a conclusion about the impact of CFLs on peak demand in all areas. For the purpose of monitoring, only data from Banda, Najja area and Kampala Metro (where the available technical data from UMEME is covering the period after CFL distribution as in Table 1.4) have been aggregated during the monitoring period.

**Table 1.6: Aggregated Peak Demands for Banda, Kampala Metro and Najja Districts.**

<b>UMEME district</b>	<b>Feb.07</b>	<b>Mar. 07</b>	<b>April.07</b>	<b>May.07</b>	<b>June .07</b>
Banda	57.214	51.198	51.212	52.214	48.518
Kampala Metro	23.802.	26.302	14.511	26.658	22.612
Najja area	34.198	34.026	32.607	35.313	31.606

It may be noted from Table 1.6 above, that there is a consistent drop in peak demand in Banda. There has been an average drop of about 10% during the monitoring period. Kampala Metro and Najja area have not shown significant changes.

## SECTION TWO

### 1.0 MONITORING

#### 1.1 Purpose of Monitoring

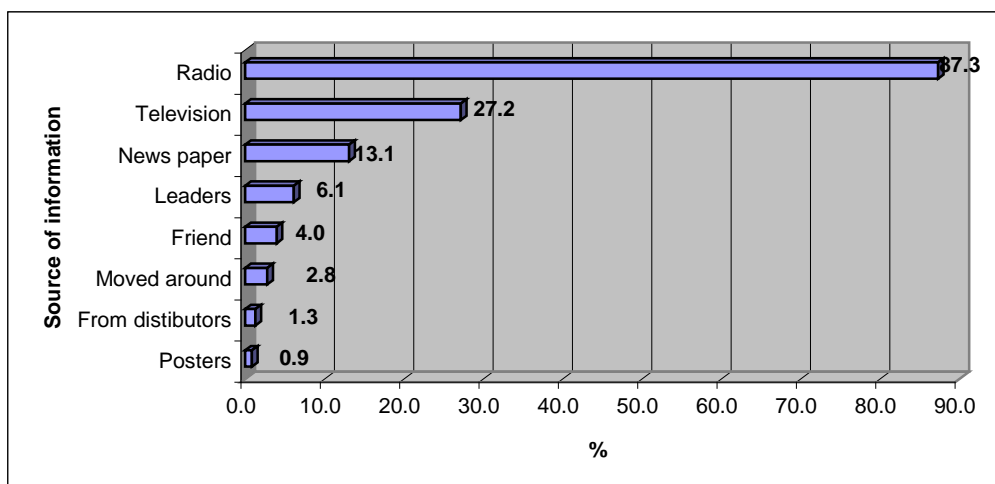
The purpose of monitoring the distribution of CFLs is primarily to determine whether the exercise is being implemented as planned and whether the programme is achieving its objectives. From this perspective, the Consultant has obtained the following categories of monitoring data:-

- i. Technical Data obtained from the utility (UMEME) discussed in the previous section.
- ii. Monitoring report on distributors of CFLs (Yellow Pages) as in the annex.
- iii. Sample results from the field survey from the Banda district as discussed in this section.
- iv. Feedback from Yellow Pages Management and Field Distributors

#### 1.2 Field Sample Results

This Section presents findings from the monitoring activities from Kampala districts in which 1021 domestic customers were surveyed. It has been found that most of the domestic customers (93%) in Kampala had known about the Government promotion of energy saving lamps for domestic customers through provision of 3 energy saving lamps (CFL). Fig. 3 below shows that the main source of information about this program has been through the radio (87.3%), TV (27%) and Newspapers (13%).

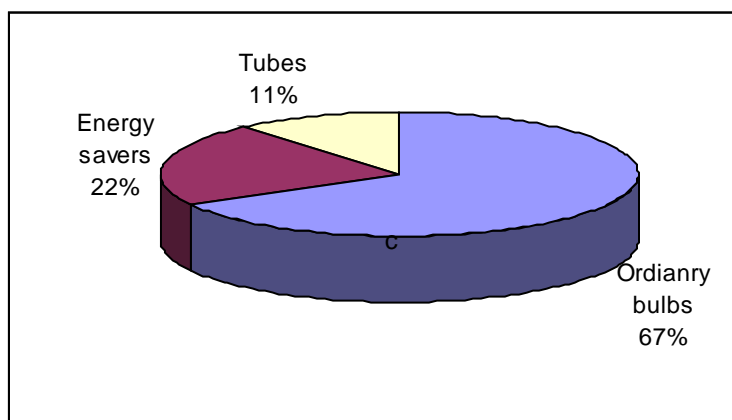
**Figure 3. Sources of Information about CFLs**



### 1.3 Share of Different Types of Bulbs

Fig. 4. below, shows that in total, there were 7288 lighting bulbs of which 4876 (67%) were ordinary bulbs, 1576 (22%) energy savers, and 837 fluorescent tubes (11.5%).

**Fig 4: Share of different types of lighting bulbs before the project**



The trend in ownership and use of the ordinary bulbs as well as energy savers and tubes is similar across the different UMEME districts as can be seen in Table 2.1 below. Overall, 89% of the domestic customers had ordinary bulbs (5 on average), while 37% had energy savers (4 on average) and 37% had fluorescent tubes (3 on averages). However, Kampala domestic customers had relatively more number of bulbs on average than any other UMEME district (12 ordinary bulbs, 8 energy savers and 4 tubes). The difference is mainly due to the nature of energy demand and uses between urban centres and rural ones.

**Table 2.1 Ownership and use of different types of lighting bulbs by UMEME district**

Umeme district	Ordinary bulbs		Energy savers		Tubes		Total	
	% with	Avg number	No	Mean	No	Mean	No	Mean
Banda	93.3	5	45.5	5	36.4	3	165	8
Najjanankumbi	88.2	5	42.2	3	27.3	2	161	6
Wandegeya	91.2	5	41.8	4	34.7	2	170	7
Nakulabye	92.5	5	42.5	3	50.9	2	106	6
Natete	94.4	5	38.7	4	37.9	3	124	7
Kitintale	97.0	6	13.4	2	38.8	2	67	7
Kabalagala	98.7	6	15.4	4	24.4	2	78	7
Kampala	84.8	12	50.0	8	76.1	4	46	17
Entebbe	93.8	5	42.2	4	46.9	3	64	7
Total	(907) 88.8	5	(378)37.0	4	(374)36.6	3	1021	7

## 1.4 Receiving of the energy savers

Table 2.2 below shows that though the majority (83%) of the domestic customers sampled said they had got the new energy saving bulbs from the government through the Yellow Pages. However, a high proportion (17%) denied getting the CFL bulbs.

The Consultant held Focus Group discussion (FGD) with Yellow Pages to explore the reasons for low coverage in some districts such as Banda, Kabalagala, etc. The discussions revealed that in some cases maximum distribution of CFLs was hampered by inadequate sensitisation, while in others, flyers and posters were printed in English. Yet in others Yellow Pages put on yellow shirts and dresses which were mistaken for NRM party propagandist (see **Report on Focus Group Discussion, Annex 2**)

**Table 2.2: Distribution pattern of CFLs**

	Yes		No		Total
	No	%	No	%	
Banda	127	76.0	40	24.0	167
NAjjanankumbi	137	81.5	31	18.5	168
Wandegeya	140	80.9	33	19.1	173
Nakulabye	100	91.7	9	8.3	109
Natete	101	77.1	30	22.9	131
Kitintale	64	91.4	6	8.6	70
Kabalagala	62	79.5	16	20.5	78
Kampala	58	95.1	3	4.9	61
Entebbe	55	85.9	9	14.1	64
Total	844	82.7	177	17.3	1021

## 1.5 Number of CFLs Distributed to UMEME customers

Table 2.3 below shows that though the UMEME customers were supposed to get three bulbs each, 81% satisfied this condition. However, 9% got more than three and some reported having received up to six bulbs. In some cases 7% reported receiving 2 CFLs while 4% reported receiving one bulb.

**Table 2.3: Number of bulbs received by the domestic customer**

UMEME District code	More than 3	Three/All	Two	One	Total
Banda	10.2	79.5	5.5	4.7	127
NAjjanankumbi	7.3	86.1	2.9	3.6	137
Wandegeya	15.0	74.3	7.9	2.9	140
Nakulabye	4.0	87.0	5.0	4.0	100
Natete	7.9	79.2	6.9	5.9	101
Kitintale	0.0	79.7	15.6	4.7	64
Kabalagala	8.1	83.9	4.8	3.2	62
Kampala	17.2	74.1	8.6	0.0	58
Entebbe	3.6	85.5	7.3	3.6	55
Overall	8.6	80.9	6.6	3.8	844

### 1.6 Whether the bulbs distributed are still working

The bulbs which were received by the domestic customers have been subjected to criticism by some clients complaining that in less than 1 month some bulbs were not working. Table 2.4 below shows that clients who had got more than 3 bulbs, 8% said they were left with only 2 working, while those who got only three, 10% said only two were working, 3% said only 1 was working while only 2% had all of them not working. Those that received two bulbs, 9% said only one were still working. The customers that got one bulb, 13% said it is no longer working. This data shows that the replacement of the bulbs must be looked into seriously.

It can be estimated that in a sample of 844 domestic customers who got the bulbs (approximately 2412 CFL), a total of about 181 bulbs (7.5%) were no longer working.

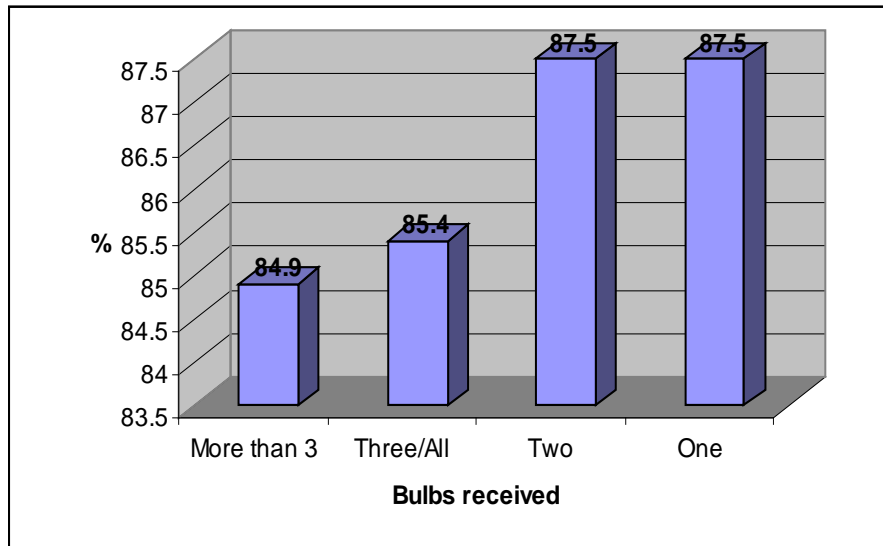
**Table 2.4: Whether the CFLs are still working**

Bulbs received	Still working				Total
	Three/All	Two	One	None	
More than 3	84.9	8.2	4.1	2.7	73
Three/All	85.4	9.7	2.6	2.3	683
Two	0.0	87.5	8.9	3.6	56
One	0.0	0.0	87.5	12.5	32
Total	76.4	14.3	6.4	2.8	844

In brief, those who received more than three bulbs, only 85% said they are still working, while the same proportion (85%) of those that got three bulbs said they are all still working. The highest proportion of those with all received bulbs still in

working conditions was noted among those that got 2 bulbs (88%) and one bulb. It has been shown in Section One of this Report that CFLs are positively related to reduced demand when used. Hence there is need for Government to look into the quality of CFLs and their replacement if some of them are found dysfunctional. Figure 5 below shows the proportion of customers whose CFLs are still working.

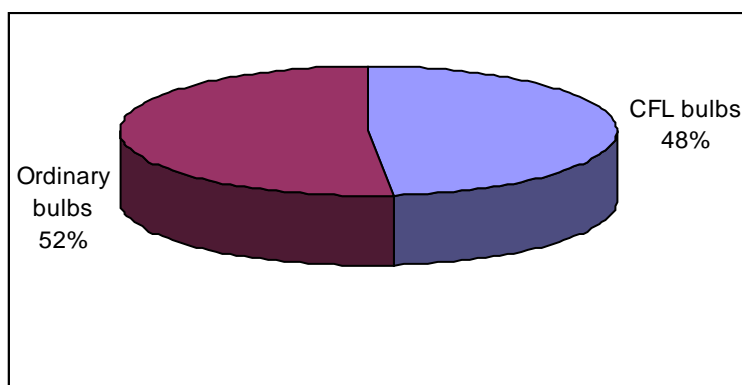
**Fig 5: Proportion of customers with functional CFLs**



Data from the study also shows that those (125 domestic customers) who have bulbs that are no longer working, (65%) have managed to replace them, and of those who have replaced them, majority (52%) have gone back to the ordinary bulbs leaving 48% that have looked for the energy savers to replace them, as can be seen in Figure 6, below. When asked to explain the tendency of customers reverting to use of the ordinary bulbs (recidivism), the Yellow Pages staff explained that many UMEME customers found CFLs more expensive to buy compared to ordinary bulbs. This behaviour if unchecked, will negatively affect the purpose of buying and distributing CFLs.



**Fig 6: Replacement for the blown CFLs**



### 1.7 Surrendering of Ordinary Bulbs

Though the customers were required to hand in the ordinary bulbs before getting the energy savers, there are some instances where customers did not do this. For example Table 2.5 shows that of those who received more than 3 bulbs, 90% gave in three ordinary bulbs to be destroyed, meaning that 10% gave in less than 3 bulbs. Those that got three bulbs, 4% did not give in three ordinary bulbs while those that got two bulbs, 2% gave in only 1 bulb. This may imply that the some customers could have simply shifted the old ordinary bulbs to news rooms which did not have bulbs in order to qualify for the three CFLs.

**Table 2.5: Number of incandescent bulbs handed over before receiving CFLs**

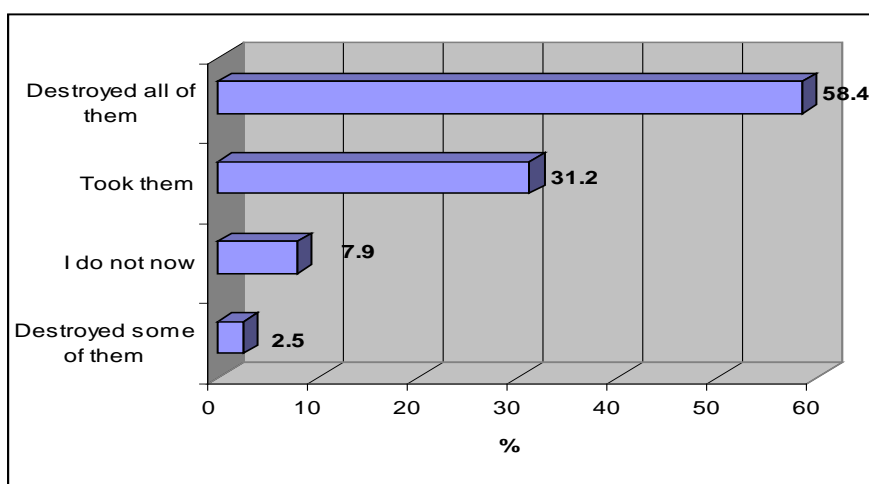
Bulbs received	Bulbs given in for destroying				
	Three/All	Two	One	None	
More than 3	90.1	2.8	5.6	1.4	71
Three/All	96.0	1.6	2.2	0.1	670
Two	0.0	98.1	1.8	0.0	55
One	0.0	0.0	96.8	3.2	31

### 1.8 Destruction of Ordinary Bulbs

Table 2.6 below shows that while the majority of the domestic customers sampled (58%) said the ordinary bulbs were destroyed, still a high proportion reported that the distributors decided to go with them (31%) while 3% said they destroyed some bulbs

but not all leaving still 8% saying they do not know what these distributors did with the bulbs. This is a clear indication that the Yellow Pages is not consistent with the procedures of destroying ordinary bulbs which are handed in before the CFLs are given out. Figure 7 illustrates the data given in Table 2.6 below. Table 2.6 also shows the district where the least number of incandescent bulbs were destroyed was Kampala metro, and as expected, a high proportion of respondents (76%) said the Yellow Pages personnel too the incandescent bulbs with them.

**Fig 7: What the Yellow Pages did with the surrendered bulbs**



**Table 2.6: What is done to the surrendered incandescent bulbs?**

UMEME District code	Destroyed all of them %	Destroyed some of them %	Took them %	I do not now %	Total
Banda	67.5	4.8	23.0	4.8	126
Najjanankumbi	68.4	3.0	24.8	3.8	133
Wandegeya	77.9	1.4	15.0	5.7	140
Nakulabye	37.8	3.1	51.0	8.2	98
Natete	65.3	1.0	22.8	10.9	101
Kitintale	45.3	0.0	31.3	23.4	64
Kabalagala	51.6	4.8	35.5	8.1	62
Kampala	17.2	3.4	75.9	3.4	58
Entebbe	54.5	0.0	34.5	10.9	55
Total	58.4	2.5	31.2	7.9	837

Other places where the bulbs were not destroyed as required were Nakulabye (51%) while in Kitintale (23%) Natete (11%) and Entebbe (11%). A good proportion of the domestic customers (8%) expressed ignorance on what Yellow Pages does with the surrendered incandescent bulbs.

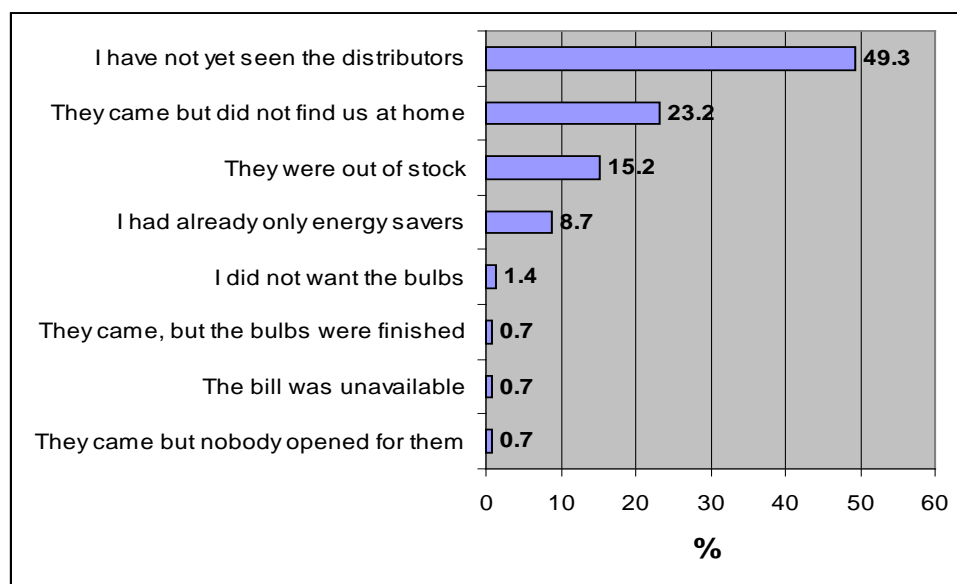
## 1.9 Reasons why some UMEME Customers never got the bulbs

Table 2.7 and Figure 8 below show the main reasons for the failure of some customers not having received the CFL bulbs. It may be noted that 49% of those who missed claimed not to have ever seen the distributors. 23% agreed that the distributors came but the customers were not at home. 15% said the bulbs were out of stock by the time the Yellow Pages reached their premises. 9% said that already bought energy savers and 1.4% did not want the bulbs.

**Table 2.7: Why some UMEME customers miss being issued with CFLs**

UMEME District code	I have not yet seen the distributors	They came but did not find us at home	They came but nobody opened for them	I had already only energy savers	I did not want the bulbs	They were out of stock	The bill was unavailable	They came, but the bulbs were finished	
Banda	69.2	5.1	0.0	10.3	0.0	10.3	2.6	2.6	39
NAjjanankumbi	34.4	37.5	0.0	9.4	0.0	18.8	0.0	0.0	32
Wandegeya	36.7	43.3	0.0	6.7	3.3	10.0	0.0	0.0	30
Nakulabye	0.0	0.0	0.0	0.0	0.0	100.0	0.0	0.0	1
Natete	45.5	9.1	9.1	9.1	0.0	27.3	0.0	0.0	11
Kitintale	33.3	33.3	0.0	0.0	0.0	33.3	0.0	0.0	3
Kabalagala	70.0	10.0	0.0	10.0	0.0	10.0	0.0	0.0	10
Kampala	66.7	0.0	0.0	0.0	33.3	0.0	0.0	0.0	3
Entebbe	55.6	22.2	0.0	11.1	0.0	22.2	0.0	0.0	9
Total	49.3	23.2	0.7	8.7	1.4	15.2	0.7	0.7	138

**Figure 8: Why some UMEME customers miss issuance of CFLs**



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## ANNEX 1

**Table 1.3: Average monthly peak demand (MVA) for six months i.e. January to June, 2007 for various lines in the project area.**

<b>UMEME District</b>	<b>Feeder name</b>	<b>Jan.07</b>	<b>Feb.07</b>	<b>Mar. 07</b>	<b>April.07</b>	<b>May.07</b>	<b>June .07</b>	
<b>BANDA</b>	SEETA	4.922	5.016	4.844	4.509	4.596	4.698	
	NAMUGONGO	4.594	4.697	4.438	4.169	4.117	4.308	
	KYAMBOGO	1.565	1.462	1.496	1.475	1.496	1.337	
	PORT BELL	3.176	5.187	3.146	3.017	3.121	3.156	
	MANDELA STADIUM	0.383	0.000	0.000	0.038	0.244	0.422	
	BRITTANIA	7.117	6.800	5.488	5.965	7.067	3.984	
	CMB							
	KAMPALA IND							
	JINJA RD							
	BUGOLOBI	4.886	3.634	3.708	3.429	3.949	3.983	
	NAGURU	3.300	3.337	3.206	3.234	3.511	3.557	
MUKONO	12.184	11.990	11.532	12.082	11.939	11.924		
	KIWATULE		2.347	2.533	2.352	1.752	1.563	
	KYAMBOGO		2.215	2.325	2.429	1.962	1.814	
	KISAASI				4.358	3.378	3.054	
	BUKOTO	1.030	1.101	1.028	0.963	0.819	0.797	
	BUTABIKA	0.534	0.530	0.516	0.510	0.509		
	BREWRIES	2.489	2.583	2.397		2.466	2.525	
	KIREKA	2.442	2.495	0.000	0.000	0.000	0.000	
	KITINTALE	3.230	3.820	4.541	4.584	4.666	4.450	
	<b>BOMBO</b>	BOMBO		6.726	6.680	6.416	6.595	6.907
	<b>ENTEBBE</b>	TOWNSHIP SPUR						
AIRPORT			3.430	3.419	3.211	3.170	3.333	
KISUBI		2.151	2.111	0.833	2.018	2.231		
ENTEBBE TOWNSHIP		4.249	4.139	4.164	4.143	4.480	4.248	
	KISUBI MISSION	4.064	3.800	4.004	4.900	4.897	3.732	
	SISA		1.629	1.668	1.634	1.619		
			0.398	0.397	0.407	0.402	0.392	
<b>KAMPALA</b>	WANDEGEYA	3.229	4.702	6.193	3.827	5.556	3.655	
<b>METRO</b>	GAYAZA RD	5.360	5.780	5.501	5.383	5.005	5.179	
	MULAGO HOSP 1	2.716	4.905	4.784	4.956	4.864	2.697	
	MULAGO HOSP 2	1.250	1.191	1.150	1.199	1.197	1.133	
	MAKERE UNIV	6.307	6.179	5.848	5.796	6.007	5.693	
	NAKULABYE	5.606	6.084	5.798	5.994	5.908	5.294	
	KAWEMPE	7.217	6.285	6.229	5.994	5.908	5.294	
	KOLOLO	3.258	3.306	3.190	3.024	3.102	2.673	
	KAWANDA							

	KAWEMPE	2.170	2.205	2.072	1.891	1.619	1.585
	NAMULONGE	2.273	2.408	2.370	2.260	1.721	1.555
	DEWINTON ROAD	2.172	1.912	2.116	1.320	2.024	1.996
	KAMPALA IND			0.330	0.370	0.404	0.343
	CRESTED TOWERS	1.754	1.738	1.923	1.983	3.805	1.767
	KITANTE ROAD	1.502	1.414	0.000	0.000	1.586	0.000
	KOLOLO						
	NEETA CINEMA	3.729	3.693	4.125	1.670	4.113	3.949
	AMBER HOUSE		4.079	6.534	4.748	3.860	3.587
	RAILWAY STATION		2.660	2.955	3.003	2.803	2.891
	UCB		0.860	0.868	0.982	0.728	0.702
	UGANDA HOUSE	0.347	0.451	0.502	0.475	0.495	0.418
	WILSON LANE	6.678	6.995	6.967	0.000	6.840	6.959
<b>NAJJA AREA</b>	MITYANA						
	GABA WW 2	3.536	3.404	3.534	2.848	2.880	2.876
	GABA WW3	2.252	2.551	2.553	2.471	2.213	2.183
	GABA WW1		1.874	1.936	1.940	1.974	1.936
	Lukuki + Bbunga		5.080	5.011	5.411	5.675	4.376
	KIGO	3.652	3.716	3.543	3.411	3.288	3.249
	ENTEBBE 1						
	NAJJANANKUMBI	2.377	2.320	2.362	2.080	2.182	2.327
	AMERICAN Embassy		0.582	0.579	0.598	0.577	0.541
	KANSANGA		3.022	2.712	2.081	2.685	1.614
	MUYENGA		2.027	2.039	1.667	1.497	1.485
		KIBULI					
	NSAMBYA		4.545	4.519	4.500	4.762	4.374
	LUKULI		5.077	5.238	5.600	7.580	6.645
<b>NATEETE</b>	NANSANA/KAWALA	2.856	2.802	2.802	2.867		
	MASANAFU	0.745	0.756	0.764	0.776	0.773	0.798
	NAKULABYE	2.250	2.349	2.225	2.150	2.132	2.059
	KAKIRI		2.040	1.981		2.069	2.039
	BUDDO		4.116	4.054	4.341	4.372	4.081
	NATETE		4.566	4.129	4.079	4.060	3.882
	MASAKA	4.461	3.248	5.548	5.373	8.775	5.346
	BUNAMWAYA		2.570	2.627	2.839	2.675	2.587
	KABUSU		5.174	6.054	4.705	4.741	4.571
	KABOWA		3.874	3.896	3.867	3.748	3.625
	KATWE 1		1.233	1.156	1.153	1.154	1.093
	NAMIREMBE ROAD					4.793	
	KATWE 2						
	KISENYI						

## ANNEX 2

### REPORT OF FOCUS GROUP DISCUSSION WITH MEMBERS OF YELLOW PAGES FIELD STAFF

**Date:** 10.8.2007

**Place of Discussion:** Yellow Page Head Office

#### **Members Participating in the focus Group Discussion:**

- i) Kabagambe
- ii) Nantume Winnifred
- iii) Nyapidi Douglas
- iv) Okumu Patricia
- v) Ntanda Sulaimani
- vi) Ssesanga Hassan
- vii) Wako Geoffrey (Team Leader)
- viii) Kimera John
- ix) Prof. James Sengendo, Facilitator
- x) Geoffrey Bakabulindi, Recorder
- xi) Almas Sendagire, Discussant

## **1. ISSUES RAISED DURING THE DISCUSSION**

### **1.1 Introductions**

The participants introduced each other, giving a brief description of the role played in the distribution exercise. The Yellow Pages staff members were assured that the exercise was a dialogue meeting and not an interview. Consequently everybody was free to participate and make a contribution even if there was no specific question or issue raised at that time. The discussion was to be focused on the CFLs distribution exercise sanctioned by the Ministry of Energy and Mineral Development to get feedback and share experiences with the distributors.

### **1.2 Objective:**

The purpose and objectives of the exercise were explained to the distributors by Professor James Sengendo and the discussion was recorded by Mr. Bakabulindi Geoffrey. The following issues were raised:

#### **1.2.1 What were the experiences that affected the effective implementation of the exercise?**

- Generally the awareness was rather low especially in outside Kampala, for example places like Mpigi and Jinja where few people knew about the government initiative to promote energy saving in households.
- Efforts were made to sensitize the public through radio announcements, posters and fliers where printed by the ministry. However, radio announcements tend to benefit those with radio sets
- Whereas sensitization went on for about two weeks but still many people in the sample didn't have the required penetration that was intended. The radio stations that were used were CBS, Simba, and Capital, all of which are urban stations. Areas which are far from Kampala such as parts of Jinja, Mpigi did not get information about the exercise.
- The posters were in English thereby discriminating on those who did not know how to read English language. All these contributed to a lack of awareness by the people which posed a great difficulty to us the distributors.
- An example of a well informed community was Kazo in Kawempe Division where the consumers were well informed and it took a short time to complete the exercise. Yet in Mpigi district where sensitization was poor, people asked many questions and some rejected the CFL's.

### **1.2.2 Were there any biases concerning the CFLs and the distribution process?**

Several biases were mentioned. Given our yellow uniforms, some people mistook the exercise for a political strategy to converse for support to the NRM party. The Movement party color is yellow and by coincidence the distributors also put on Yellow shirts and dresses to suit the Company name "Yellow Pages". *'This cost us a lot of time and labor to make it clear to them that we had nothing to do with politics'*.

### **1.2.3 What is the people's attitude to the whole exercise?**

People's attitude differed mainly according to the level of sensitization in a particular area. People who knew what was happening offered little or no resistance and those who were clueless were very uncooperative. Generally, over 80% of the people were appreciative of the exercise as they saw it as a way of saving them from exorbitant bills and to save energy. People however complained about the number of bulbs being given out especially those who had a lot of lighting points in their house.

### **Qn: What procedure is followed for approaching customers and carrying out the exercise?**

On approach, the distributors introduce themselves, talk about the exercise to the respondent, ask for a power bill or look at the meter as it is three bulbs per meter to be given out. They then remove incandescent lamps which are working, they double check first by switching on the bulbs before they are accepted, and then they install



the CFL's in the lamp holders. They then provide the respondents with installation cards that verify that they received the CFL's. In case no body is there to receive these CFL's they are advised to visit the Yellow Pages offices to pick there lamps.

**Qn: What do you say to allegations that some of you where selling these CFL's?**

It was clearly stated that the bulbs where not for sale and anybody found selling them would be handled like a criminal as this is a police case. The bulbs that were being sold were from OSRAM but the distributed ones where government issued. Yellow Pages is verifying these claims.

However some respondents were probably going ahead to sale the bulbs we were distributing after getting them for free. This makes it look like it Yellow Pages that is selling these to people. This is also a possible source of these claims.

**Qn: What challenges have you faced?**

There were problems in putting up posters as some distributors allege to have been arrested by law enforcement teams and LC's coupled with resistance from the locals in general, despite the Ministry having confirmed this exercise. It was not City council that did this.

In instances where a person had one lamp-holder, they would give out three CFLs as long as he or she produced the required 3 ordinary bulbs.

According to them, the bottom line is to save energy and not who gets the bulbs, whether UMEME customers or not and having to reach 60 households per distributor each day was tedious though achievable. Some people think that 3 CFLs are few and it was laborious having to explain the whole exercise to them and installing the bulbs. Other people threw away their installation cards which are supposed to show that the distributors reached their homes. Given the fact that the fliers and posters were in English, this made it had for many locals to understand the exercise and posed a big challenge. And the announcements made on radios and newspapers were not timely with actual distribution.

**Qn: How was the sensitization process?**

Distributors had posters and fliers from Ministry of Energy and Mineral Development (MEMD) which they used to sensitize the people about the process

**Qn: How do you account for the bulbs you receive?**

Each team is comprised of four people one of whom is the team leader. Every morning each member gets a known number of CFL's and are required to return at least an equal number of incandescent lamps in the evenings. Ideally the returned incandescent lamps should be the filaments as the glass part of the bulbs are to be

broken in front of the respondents after the exchange has taken place. This procedure takes care of the accountability of the lamps.

**Qn: Any suggestions you might give if this where ever to be repeated?**

Announcements and publicity should be done early and local upcountry radio stations should also be prioritized as these alert more rural people. Posters should be put up in local languages also for those whose literacy is limited. Also the number of bulbs given out per household should be flexible as some homes have up to 20 lighting points while others had as low as one. Institutions like barracks, universities and offices should also be considered as these were ignored by the past exercise.

Local council people should be brought on board in the distribution exercise as most of them complained about having no idea about the exercise yet it was being carried out on their territory. Only the police was being notified by the ministry, LC's said they too needed notification and recognition.

Allegations of selling these CFL's should be followed up and thoroughly investigated by the CID or by contracting a private firm of investigators such as INTERID.

### **ANNEX 3:**

#### **INDIVIDUAL DEPTH INTERVIEW WITH MANAGEMENT OF YELLOW PAGES**

**Date of Interview:** 9.8.2007

**Interviewee:** MR. KABONGE RICHARD, Senior Manager, Yellow Pages

**Interviewer:** Mr Almas Sendagire, CREED

**Place of Interview:** Yellow Pages Head Office

**Preliminaries:** (Introductions, purpose etc, conducted and completed)

**Qn. One:** What are your experiences in this project from a management perspective?

**Answers:**

1) Number of bulbs distributed up to end of July are 480,000

2) Areas distributed are:

- Kabalagala
- Banda
- Wandegeya
- Najjanankumbi
- Kampala Metro
- Entebbe
- Nakulabye
- Nateete
- Mpigi
- Kitintale
- Mukono
- Lugazi
- Jinja

**Qn 2: Why some areas are still being distributed**

- Doing mop up of people who are not at home
- Some people were hostile, and have to be revisited etc.
- Some people are aware of the exercise so they sent the distributors away

Qn. 3 What Challenges have your Company faced in this exercise?

- Some customers were not listed by UMEME. These were distributed with CFLs though they were not on the distribution list, as long as they were on the line and had a meter.
- People who had just been connected to grid so there was no record in February.
- Public awareness of the exercise was not very good. So some people were hostile, did not want anything to do with UMEME and this took long time to explain and overcome.
- Police Barracks have no meters. One finds the whole place with only one meter or no meters at all. So it was difficult explaining to these people
- **On the claim that Yellow Pages is selling the Government CFLs.**
  - i) OSRAM bulbs are on the market in Uganda
  - ii) All of them are of green boxes
  - iii) The major difference is that those of the Government have a Uganda emblem on them and a label “NOT FOR SALE”
  - iv) Nevertheless, some recipients may be selling bulbs after receiving them for free and YP would have no control over this after they have done their part
  - v) YP have carried out investigations and have not found any CFLs being sold by hawkers or by shopkeepers
- Yellow Pages has employed 60 distributors and have dealt with all kinds of people, some of home have no interest at all in the exercise and while others are hostile to UMEME

**Qn: What has Yellow Pages done to solve the problems mentioned?**

- Sensitize the public so that people become educated about the purpose of the exercise and its outcomes
- Give people information who don't know in local languages
- Carry out Police investigations and arrest those caught selling the CFLs
- Try home visiting on Sundays to meet owners who are not at home during normal week days.

**Qn: What are the strong points have you experienced?**

- Ministry of Energy and Mineral Development is delivering CFLs batches on time

**Qn: Is there any limitations that are affecting effective implementations of this project?**

**Ans:** Several limitations, mainly of financial nature. For example:

- Money from the Ministry is not coming in time. So YP has to borrow from banks at exorbitant interest rates
- YP didn't give advance payment and have had to use own funds for this job.

**Qn:** **What methods have you used to mitigate these problems and challenges?**

- Management assists distributors to locate the transformer
- Walk with distributors according to grid reference system
- YP helps people to install CFLs in lamp holders
- Distribution staff puts installation certificate in Meter box
- Team Leader checks every evening to ascertain that all activities are as per the guidelines

**Qn:** **What suggestions do you have to make the exercise more successful?**

Suggestions

- Increase public awareness and sensitization on radio-talk shows, TV, newspapers, advertising, etc.
- Carry out police investigations to ascertain if the Government CFLs are being sold and who is behind it
- Put up more posters in local languages.

## ANNEX 4

### QUESTION GUIDE FOR FGD AND IDI

- 1) Introduce your self and other people; the purpose and its anticipated outcomes. Create a friendly atmosphere
- 2) What has been your experiences that affected the effective implementation of the exercise
- 3) What are the strength discovered during the exercise of distribution the CFLs?
- 4) What type of challenges have you experienced? For example, is there anything threatening the successful implementation of this project?
- 5) What is the people's attitude to the whole exercise?
- 6) Is the procedure is followed for approaching customers and carrying out the exercise user friendly?
- 7) What should be done to ensure more accountability and transparency in the whole exercise?
- 8) Is there any suggestions you may give to make the exercise more successful?

**Note: These are just guiding questions. It may be useful to probe a little further in order to generate more indepth understanding of the question and issues associated with it.**

**ANNEX 3**

**QUESTIONNAIRE FOR DOMESTIC CUSTOMERS**



**REPUBLIC OF UGANDA**

**MINISTRY OF ENERGY AND MINERAL DEVELOPMENT**

**CONSULTANCY SERVICES FOR MONITORING,  
VERIFICATION AND EVALUATION OF THE COMPACT  
FLUORESCENT LAMP (CFL) PROGRAM**

**Questionnaire Part I**  
**Monitoring, Verification and Evaluation**

*Of the distribution of Compact Fluorescent Lamps  
Conducted by:*

**Development Consultants International Limited (DCI)**  
Plot 25 Luthuli Rise, Opposite Bugolobi Flats  
P.O. Box 1108, Kampala, Uganda  
E-mail: [dc@spacenet.co.ug](mailto:dc@spacenet.co.ug)

*In Association with*

**Centre for Research in Energy and  
Energy Conservation (CREEC)**  
Makerere University – Faculty of Technology  
P.O. Box 7062, Kampala, Uganda  
[creec@tech.mak.ac.ug](mailto:creec@tech.mak.ac.ug)

The first part of the survey will be used to gather information as guidance in monitoring and verification of the project. In this survey the information sought is about whether the lamps are distributed according to the agreed plan.

**Ref. No.:** \_\_\_\_\_ **Date of Survey:** \_\_\_\_\_

District: \_\_\_\_\_

County: \_\_\_\_\_

Sub-county/Division: \_\_\_\_\_ Parish/Ward \_\_\_\_\_

Village/Zone: \_\_\_\_\_

Physical address: \_\_\_\_\_

Electricity (UMEME) account Number: \_\_\_\_\_

UMEME District \_\_\_\_\_



Code	Identification/Questions
<b>100</b>	<b>Background Information</b>
101	Sex of the Head of household Male .....(1) Female.....(2)
102	Marital status of the head of household Single .....(1) Married.....(2) Divorced/separated.....(3) Widowed.....(4)
103	Main occupation of the head of household Civil servant ..... (1) Other salaried worker..... (2) Private business..... (3) Crafts..... (4) Casual labourer..... (5) Unemployed..... (6) Others.....(7)
104	Highest level of education of the head of household Graduate/diploma holder .....(1) ‘A’ Level /certificate.....(2) ‘O’ Level..... (3) Primary.....(4) None.....(5)
<b>200</b>	<b>Current energy consumption patterns</b>
<b>201</b>	<b>I would like to look at your last two recent UMEME bills</b> <b>(Record the following)</b>

202	<p>How many lighting bulbs do you have operational in your house according to the following locations</p> <p>Bedrooms (total bulbs) _____ (Energy savers bulbs) _____</p> <p>Sitting room and dinning room (total bulbs) _____ (Energy savers bulbs) _____</p> <p>Bathrooms/toilets (total bulbs) _____ (Energy savers bulbs) _____</p> <p>Study rooms and reading rooms (total bulbs) _____ (Energy savers bulbs) _____</p> <p>Corridors (total bulbs) _____ (Energy savers bulbs) _____</p> <p>Balcones and security lights (total bulbs) _____ (Energy savers bulbs) _____</p> <p>Others (total bulbs) _____ (Energy savers bulbs) _____</p>
203	<p>Are you aware of the Government's program of promoting energy saving in households by providing 3 energy saving lamps (CFL) to UMEME customers?</p> <p>Yes .....(1)</p> <p>No.....(2)</p>
204	<p>If yes, what was the source of first information about it?</p> <p>Radio.....(1)</p> <p>Television.....(2)</p> <p>Newspapers..... (3)</p> <p>Magazine.....(4)</p> <p>Posters .....(5)</p> <p>Friend.....(6)</p> <p>Leaders ..... (7)</p> <p>Others (specify): ..... (8)</p>
<b>300</b>	<b>Distribution of CFL</b>
301	<p>Have you received any Energy Saving Lamps (CFL), provide by the Government?</p> <p>Yes .....(1)</p> <p>No.....(2)</p>
302	<p>If yes, When did you get it/them? Day: _____ Month:_____ Year: 20_____</p>
303	<p>Do you know the name of the company that gave you the lamps?</p>

	<p><b>Yes .....(1) if yes, which one was it _____</b></p> <p>No .....(2)</p>
304	<p>How many lamps did you get?</p> <p>More than 3 .....(1)</p> <p>Three/All: .....(2)</p> <p>Two: .....(3)</p> <p>One: .....(4)</p> <p>None: ..... (5)</p>
305	<p>Are the lamps labelled with the Emblem of the Government of Uganda?</p> <p><b>Yes .....(1)</b></p> <p>No .....(2)</p>
306	<p>Of the three bulbs you received, how many are still operating?</p> <p>Three/All: _____ (1)</p> <p>Two: _____ (2)</p> <p>One: _____ (3)</p> <p>None: _____ (4)</p>
307	<p>Have you replaced any of them?</p> <p><b>Yes .....(1)</b></p> <p>No .....(2)</p>
308	<p>By what type of bulb did you replace it/them with?</p> <p>CFL bulb .....(1)</p> <p>Ordinary bulb: .....(2)</p>
309	<p>Before getting the energy saving lamps, how many ordinary bulbs did you surrendered to the distributor?</p> <p>Three/All: .....(1)</p> <p>Two: .....(2)</p> <p>One: .....(3)</p> <p>None: .....(4)</p>
310	<p>What did the distributor do to the lamps you surrendered?</p>

	Destroyed all of them .....(1) Destroyed some of them (how many) .....(2) Took them: .....(3) I do not know: .....(4)												
311	Do you know the power rating (wattage) of the lamps received and those you gave up? <b>Received bulbs</b> Yes .....(1) No .....(2) <b>Gave in bulbs</b> Yes .....(3) No .....(4)												
312	If yes, what are the watts written on each bulb that you receive and those you gave up. <table border="1" style="margin-left: 40px;"> <thead> <tr> <th><i>Lamps</i></th> <th><b>Lamp 1</b></th> <th><b>Lamp 2</b></th> <th><b>Lamp 3</b></th> </tr> </thead> <tbody> <tr> <td><b>Wattage of received bulbs</b></td> <td></td> <td></td> <td></td> </tr> <tr> <td><b>Wattage of given up bulbs</b></td> <td></td> <td></td> <td></td> </tr> </tbody> </table>	<i>Lamps</i>	<b>Lamp 1</b>	<b>Lamp 2</b>	<b>Lamp 3</b>	<b>Wattage of received bulbs</b>				<b>Wattage of given up bulbs</b>			
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<b>Wattage of given up bulbs</b>													
313	If you have not got them, why? I have not yet seen the distributors.....(1) They came but did not find us at home.....(2) They came but nobody opened for them.....(3) I had already only energy savers.....(4) I did not want the bulbs .....(5) Others.....(6)												
314	How do you think the new bulbs are going to help you By reducing the electricity bills: ..... (1) By getting good light: ..... (2) Other (Specify): ..... (3) No help at all .....(4)												

400	Comments												
401	Do you know the cost of energy saving lamps on market? <b>Yes .....(1)</b> <b>No .....(2)</b>												
402	How much do they cost? _____												
403	In case the lamps you got blow-up, will you be able to replace them afterwards from an open market? <b>Yes .....(1)</b> <b>No .....(2)</b>												
404	What is your comment on the whole program of distributing energy saving lamps by the government Use the following scale to rank the opinion of the respondent <p style="text-align: center;"><b>1.Very appropriate 2 Appropriate 3 Indifferent 4 Inappropriate 5 Very inappropriate</b></p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 80%;"></th> <th style="width: 20%; text-align: center;">Ranked opinion</th> </tr> </thead> <tbody> <tr> <td>Suitability of time and day when the distribution is made</td> <td></td> </tr> <tr> <td>The conduct of the distributors</td> <td></td> </tr> <tr> <td>Information given before giving the bulbs</td> <td></td> </tr> <tr> <td>Distributors' helpfulness in removing old bulbs and replacing them with new ones</td> <td></td> </tr> <tr> <td>Guidance on prices and where to get replacements</td> <td></td> </tr> </tbody> </table>		Ranked opinion	Suitability of time and day when the distribution is made		The conduct of the distributors		Information given before giving the bulbs		Distributors' helpfulness in removing old bulbs and replacing them with new ones		Guidance on prices and where to get replacements	
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405	What is your general comment on the distributors? _____ _____												

Name of Interviewer: \_\_\_\_\_ Name of Supervisor: \_\_\_\_\_

Signature of Interviewer: \_\_\_\_\_ Signature of Supervisor: \_\_\_\_\_

Any Remarks:

\_\_\_\_\_

